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Annex "D"

SOVIET PETROLEUM TRANSPORT CAPACITIES

I. USSR. Under the assumed conditions, and if all the minimum essential requirements were met, the USSR would be required to move a total of about 49.1 million metric tons of petroleum. Of this total, 35.5 million tons would be for internal and Far East consumption and 13.6 million would be destined for Western Europe (in addition to 3.1 million from the Satellites). Assuming that the traffic to Western Europe would originate in about equal volumes from the Baku and Ufa areas, analysis of Soviet petroleum transport capabilities indicates that such a movement would throw an insupportable burden on the Soviet railroad tank car park, even with maximum use of available alternate media. While it is believed that about 10.6 million tons of the internal requirements could be moved by inland water, including the Caspian Sea, and that 2.1 million of the Western European requirement could be handled by pipeline from Baku to Batumi and thence by Black Sea tanker to Satellite ports, there would still remain over 36 million tons to be moved at some stage by rail, including 11.5 million for Western Europe. This aggregate rail movement, however, would require at least 55,000 tank cars, whereas the 1950 Soviet tank car park is not believed to have exceeded 45,000 units of all types. Even by 1952, therefore, it seems unlikely that the USSR will have a serviceable petroleum tank car inventory in excess of 45,000 units. (Calculations are based on an average of 20 metric tons per Soviet tank car unit moving at an average speed between termini of 12 kilometers per hour, with an estimated loading and unloading time of 24 hours).

It is therefore necessary to estimate the maximum petroleum tonnage which could be delivered westward, assuming no reduction in internal and Far East requirements, by the most effective use of the limited Soviet tank car supply, supplemented wherever possible by other forms of transport. As indicated, about 2.1 million tons could be handled by pipeline from Baku to Batumi and thence by Black Sea tanker to Satellite ports. This represents the capacity of the present Soviet Black Sea tanker fleet, which consists of 11 vessels of about 50,000 GRT

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and comprises roughly 40 percent of the total Soviet-flag tanker tonnage. Since the capacity of the pipeline across the Caucasus considerably exceeds this figure, another 1.5 million tons could be moved by pipeline as far as Samtredia, near Batumi, and thence by rail to the transloading points on the Soviet-Satellite frontier. To further minimize the rail haul, an estimated 2.4 million would be moved by Caspian Sea tanker and Volga River barge as far as Stalingrad for transshipment by rail to the western Soviet borders. This tonnage represents the capacity believed to be available on the Caspian-Volga route over and above that required for internal distribution of Soviet petroleum. Of the 6.8 million tons assumed to originate at Baku for Western Europe, therefore, only 800,000 tons would remain for all-rail delivery to the western transloading stations. All of the rail hauls necessary in the foregoing movements from the Baku area to Western Europe would require about 10,000 tank cars per year which, together with internal and Far East movements involving about 27,000 cars, would account for over 80 percent of the total Soviet tank car park.

It is estimated, therefore, that less than 8,000 cars would be available for the longer-haul movements from Ufa toward Western Europe. About 2,500 of these could be used between Ufa and Riga to support the operations of the Soviet-controlled Baltic Sea tanker fleet. Over a route to Hamburg, for example, this fleet, which consists of 8 tankers of 25,000 GRT, could deliver about 1.0 mm tons of petroleum per year. Since this volume is more than twice that which could be laid down in Hamburg from Leningrad, which is closed for 3 to 4 months by ice, the slightly longer rail haul from Ufa to Riga, as compared to Leningrad, would be justified. The remaining tank cars would necessarily be employed in the long all-rail haul from Ufa to the transloading stations on the western frontier, accounting for about 2.0 million tons in a year over this route.

The petroleum movements outlined above total about 9.8 million tons and are believed to represent the approximate tank car capacities over the routes indicated, with the present transport equipment available to the USSR. The net deficit with respect to the assumed 13.6 million tons required by Western Europe from the USSR, therefore, would be in the order of 3.8 million tons per year.

II. European Satellites. In addition to 3.8 million tons of locally produced petroleum for distribution throughout the European Satellites and another 3.1 million tons from Satellite sources for Western Europe, the Satellite transport systems, as indicated above, would also be required to haul to Western Europe about 9.3 million tons of petroleum from the USSR (excluding 1.0 million tons moved across the Baltic from Riga which would not involve Satellite transport facilities). While this total of 15.0 million tons is within present Satellite capabilities, an increase in deliveries from the USSR approaching 1 million tons would probably exceed the aggregate capacity of the Satellite transport systems to receive petroleum traffic from the east without reducing other categories of traffic.

It is probable that a capacity of about 2 million tons of petroleum would exist on the Danube, of which only about 30 percent would be available for transit traffic from the USSR across the Satellite area. The capacity of the Danube for petroleum movements is limited by several factors, including shortage of tugs and barges, as well as restrictive navigational conditions.

Apart from the Danube, Eastern Europe's transport capacity to the west is determined almost entirely by the rail network. The principal factors limiting expansion of total rail capacity are the number of east-west lines, their individual surplus capacities, and the terminal facilities at points of origin and destination, especially the transloading stations along the Soviet frontier. The supply of railroad tank cars, particularly if augmented by rolling stock from occupied Western Europe, would not be a limiting factor. The requirement for distribution of 3.9 million tons of petroleum within the Satellite area, moreover, could be accomplished largely through use of secondary and north-south lines, and would not interfere seriously with movements over the east-west rail lines to Western Europe. There are 12 major east-west lines which are believed capable of accommodating all required petroleum traffic from Satellite sources, in addition to a slightly greater volume of petroleum traffic than can be delivered by the Soviet transport system.

III. The Near East. It is estimated that the pipeline capacity from Iraq and Saudi Arabia to Eastern Mediterranean ports in mid-1952 would exceed 25 million tons annually. Use of large quantities of Near East petroleum by the USSR to offset the assumed deficit in Western Europe or to augment the USSR's internal supply, however, would post major transportation problems. In the first place, the USSR would have to acquire a substantial tanker fleet through capture or defections from the West. At present, the entire Soviet-flag Black Sea tanker fleet could move only about 1.6 million tons from the Eastern Mediterranean to the Black Sea and in any case this fleet could not be withdrawn from the trans-Black Sea petroleum lift under the assumed wartime conditions without placing an intolerable burden on the Soviet rail system. In the second place, the USSR would have to establish sea-air control of at least the Eastern Mediterranean and probably the northern coastal waters as far as the Adriatic. Even if large quantities of petroleum could be transported to the Black Sea, the Satellite transport systems would still be a limiting factor, since the largest volume of petroleum traffic from the east that can be handled is in the neighborhood of 10.0 million tons. If the Near East crude were intended for use in the USSR, the Soviet rail system would have extreme difficulty distributing this tonnage, in addition to the other assumed requirements placed on the tank car park. Consequently, if the Near East petroleum resources were to be exploited, it would appear essential that the USSR acquire the requisite tanker tonnage and sea-air control in the Mediterranean to move Near East crude as far as the Adriatic, whence it could be distributed over the Western European transport network. Seven T-2 equivalents employed in this manner, for example, could lift almost 4.0 million tons a year from Eastern Mediterranean ports to Trieste, thus overcoming the deficit caused in Western Europe by the Soviet tank car shortage.

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ESTIMATED PRODUCTION, PRODUCTION CAPACITY, REQUIREMENTS, AND INVENTORY SOVIET BLOC AND WESTERN EUROPE

Annex C

PETROLEUM

I. Production

It is estimated that there will be an increase of petroleum products production in fiscal 1952 over calendar 1951 in the Soviet Orbit and Western Europe of 4 percent and 12 percent respectively. By mid-1952 the whole area will be producing at the rate of nearly 90 million metric tons, compared with an estimated output of a little over 83 million in 1951. Of these amounts about 51 percent will be supplied by the Soviet Orbit and 49 percent by Western Europe.

Since it is considered that POL production in the Soviet Orbit is crude oil limited, refinery output has been calculated on the basis of 87 percent of crude oil available plus the production from synthetics and shale oil. No effort has been made to take into account the movement from one country to another because that movement can be changed as conditions dictate. Therefore, although the production of petroleum products in the individual countries may change according to the refining location, the output for the Soviet Bloc as a unit will be subject only to gradual change.

The figures quoted in the tables have been estimated on the basis of knowledge of past performance, future plans and technological factors affecting the exploitation of the oil resources. While the figures quoted for the various countries of the Soviet Bloc may have a larger margin of error, it is believed that the production for the area as a whole is accurate to between plus 5 and minus 10 percent.

In the case of Western Europe which produces very little crude oil, 95 percent of the crude oil refined is imported. The figures quoted for 1951 and production for fiscal 1952 are considered reliable and are based on figures obtained from ECA. They do not include petroleum products that are imported. Very little high octane aviation gasoline is produced in Western Europe, but plans are being considered for the expansion of such facilities. It is not believed, however, that they will be in operation by mid-1952.

II. Inventory

Reliable estimates of inventories are not available in the case of the Soviet Bloc countries and some of the Western European countries. However, there is evidence that stockpiling of petroleum products has been going on and is continuing in the European Satellites. In the Western European countries where information is available, the figures are estimated on the basis of quantities submitted by the individual governments for 1951 and probable changes in 1952. It is believed that the probable margin of error of the estimated inventories may be as high as 30 percent.

III. Production Capacity

For the purposes of this report capacity is considered industry capacity and not necessarily refinery capacity. The capacity figures are based on the limiting factor whether crude production or refining. Prior to the assumed occupation, Western Europe capacity is refinery limited while the Soviet Bloc is crude limited. After the assumed occupation the entire area is crude limited in absence of damage to refinery facilities.

IV. Estimated Annual Production Rates, Mid-1953, Mid-1954

Estimated annual production rates, Mid-1953, Mid-1954, have been replaced by estimated production for fiscal 1953 and fiscal 1954. It is

believed that the output in the Soviet Bloc will continue to increase as the availability of raw materials increases. The estimates given are based on plan figures and technological factors controlling the oil industries of the various countries, both crude and synthetic. Transportation and labor within the Bloc will probably not present any more of a problem in 1953 and 1954 than it does now. Since there are no large quantities of crude oil imported into the Soviet Bloc, an Allied blockade will probably have very little effect on the petroleum industry.

On the other hand, Western Europe production of petroleum products will be cut to about one-eighth of that prior to the Occupation by Soviet Forces, since all imports of crude and petroleum products will be cut off by the Allied blockade. Western Europe will no longer be able to meet the minimum essential requirements for the support of her economy. The Soviet Bloc will be forced to either supply petroleum products or the raw materials for the refineries to supplement indigenous supplies. With the occupation of Western Europe by the Soviets in mid-1952, there will be acquired considerable modern refinery equipment installed since World War II. However, this will probably not add much to the Soviet Orbit high octane aviation gasoline potential.

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